

Claims

1. A fuel injection device, having a magnet valve (24) for controlling fuel flows, which valve, in at least one of its positions, closes a damping chamber (40) in the magnet valve (24) that communicates constantly with a relief chamber (41) via a damping throttle, characterized in that the damping throttle throttles in both laminar fashion (49) and turbulent fashion (39).
2. The fuel injection device of claim 1, characterized in that the damping throttle is embodied in a support plate (38), which is disposed between the damping chamber (40) and the relief chamber (41) and which closes off the damping chamber (40) toward the relief chamber (41).
3. The fuel injection device of claim 1 or 2, characterized in that the turbulent throttle (39) of the damping throttle is embodied in the form of a through bore (45) that connects the damping chamber (40) and the relief chamber (41).
4. The fuel injection device of claim 3, characterized in that the through bore (45) has a countersunk recess (47) on at least one end.
5. The fuel injection device of one of the foregoing claims, characterized in that the laminar throttle of the damping throttle is embodied in the form of a gap (49).

6. The fuel injection device of one of claims 2-5, characterized in that the support plate (38), on its side toward the damping chamber (40), has at least one indentation (51), which with the magnet valve (24), in particular the electromagnet (29) of the magnet valve (24), forms a gap (49).

7. The fuel injection device of claim 6, characterized in that the indentation (51) is round, and that the indentation (51) is disposed substantially concentrically with the through bore (45).

8. The fuel injection device of claim 6, characterized in that the indentation (51) or indentations (51) are grooves extending substantially radially to the longitudinal axis of the through bore (45).

9. The fuel injection device of one of claims 5-8, 6, characterized in that the thickness of the gap (49) or the depth of the indentation (51) or indentations (51) is from 0.1 to 0.2 mm.

10. The fuel injection device of one of claims 6-9, characterized in that the indentation (51) intersects at least one recess (53) in the support plate (38).

11. The fuel injection device of one of claims 2-8, characterized in that the support plate (38) is mounted detachably in the fuel injection device.